

10/530556

| | | | | | |
|-------------|------------|------------|------------|------------|------|
| GATCACACCC | CTCCCACCCT | TCTCTTTTCA | AGGTTGTCCC | CTTCTCCCAC | 50 |
| GGCTTTATGT | ACTTCCCCT | CTMTAATTCG | CTCTTTCCAT | TCCAAGCCAA | 100 |
| GCAACATCTG | TGAGCAGCTC | ATCCTTCCCA | ATATGGGCGA | ATGGCAGGAG | 150 |
| CAGATGATGG | GTTTTGACGT | GGAGGATGTT | CTGTCTCAGC | TGAGCCAAAA | 200 |
| TGAGAAGATT | GCTCTCTTGT | CCGGCATTGA | TTTCTGGCAT | ACTTATCCCA | 250 |
| TACCAAAGTA | CAACGTCCCT | TCAGTCCGCC | TAACGGACGG | TCCTAACGGC | 300 |
| ATACGAGGCA | CAAAGTTTTT | TGCTGGCATT | CCTGCTGCCT | GCCTGCCATG | 350 |
| TGGGACGGCC | CTGGCCTCTA | CCTGGGATAA | GCAGCTGCTG | AAGAAGGCTG | 400 |
| GGAAGCTGCT | CGGTGATGAG | TGCATCGCAA | AAGGCGCCCA | CTGCTGGCTG | 450 |
| GGCCCAACAA | TCAATACTCC | CCGATCTCCT | CTGGGGGGGC | GCGGCTTCGA | 500 |
| GTCATTTTTCG | GAAGATCCGT | ACCTGTCCGG | CATCCTTGCT | GCATCTATGA | 550 |
| TTCTCGGCTG | TGAAAGCACA | GGTGTCACT | CTGCCGTCAA | ACACTTTGTC | 600 |
| GCCAACGACC | AGGAGCACGA | GCGGCGAGCG | GTCGACTGTC | TCATCACCCA | 650 |
| GCGGGCTCTC | CGGGAGGTCT | ATCTGCGACC | CTTCCAGATC | GTAGCCCGAG | 700 |
| ATGCAAGGCC | CGGCGCATTG | ATGACATCCT | ACAACAAGGT | CAATGGCAAG | 750 |
| CACGTCGCTG | ACAGCGCCGA | GTTCTTTCAG | GGCATTCTCC | GGACTGAGTG | 800 |
| GAATTGGGAT | CCTCTCATTG | TCAGCGACTG | GTACGGCACC | TACACCACTA | 850 |
| TTGATGCCAT | CAAAGCCGGC | CTTGATCTCG | AGATGCCGGG | CGTTTCACGA | 900 |
| TATCGCGGCA | AATACATCGA | GTCTGCTCTG | CAGGCCCGTT | TGCTGAAGCA | 950 |
| GTCCACTATC | GATGAGCGCG | CTCGCCGCGT | GCTCAGGTTT | GCCCAGAAGG | 1000 |
| CCAGCCATCT | CAAGGTCTCC | GAGGTAGAGC | AAGGCCGTGA | CTTCCCAGAG | 1050 |
| GATCGCGTCC | TCAACCGTCA | GATCTGCGGC | AGCAGCATTG | TCCTACTGAA | 1100 |
| GAATGAGAAC | TCCATCTTAC | CTCTCCCCAA | GTCCGTCAAG | AAGGTCGCC | 1150 |
| TTGTTGGATC | CCACGTGCGT | CTACCGGCTA | TCTCGGGAGG | AGGCAGCGCC | 1200 |
| TCTCTTGTC | CTTACTATGC | CATATCTCTA | TACGATGCCG | TCTCTGAGGT | 1250 |
| ACTAGCCGGT | GCCACGATCA | CGCACGAGGT | CGGTGCCTAT | GCCCACCAA | 1300 |
| TGCTGCCCCG | CATCGACGCA | ATGATCAGCA | ACGCCGTAAT | CCACTTCTAC | 1350 |
| AACGACCCCA | TCGATGTCAA | AGACAGAAAG | CTCCTTGGA | GTGAGAACGT | 1400 |
| ATCGTCGACA | TCGTTCCAGC | TCATGGATTA | CAACAACATC | CCAACGCTCA | 1450 |
| ACAAGGCCAT | GTTCTGGGGT | ACTCTCGTGG | GCGAGTTTAT | CCCTACCGCC | 1500 |
| ACGGGAATTT | GGGAATTTGG | CCTCAGTGTC | TTTGGCACTG | CCGACCTTTA | 1550 |
| TATTGATAAT | GAGCTCGTGA | TTGAAAATAC | AACACATCAG | ACGCGTGGA | 1600 |
| CCGCCTTTTT | CGGAAAGGGA | ACGACGAAA | AAGTCGCTAC | CAGGAGGATG | 1650 |
| GTGGCCGGCA | GCACCTACAA | GCTGCGTCTC | GAGTTTGGGT | CTGCCAACAC | 1700 |
| GACCAAGATG | GAGACGACCG | GTGTTGTCAA | CTTTGGCGGC | GGTGCCGTAC | 1750 |
| ACCTGGGTGC | CTGTCTCAAG | GTCGACCCAC | AGGAGATGAT | TGCGCGGGCC | 1800 |
| GTCAAGGCCG | CAGCCGATGC | CGACTACACC | ATCATCTGCA | CGGGACTCAG | 1850 |
| CGGCGAGTGG | GAGTCTGAGG | GTTTTGACCG | GCCTCACATG | GACCTGCCCC | 1900 |

FIG. 1A

10/530556

CTGGTGTGGA CACCATGATC TCGCAAGTTC TTGACGCCGC TCCCAATGCT 1950
GTAGTCGTCA ACCAGTCAGG CACCCCAGTG ACAATGAGCT GGGCTCATAA 2000
AGCAAAGGCC ATTGTGCAGG CTTGGTATGG TGGTAACGAG ACAGGCCACG 2050
GAATCTCCGA TGTGCTCTTT GGCAACGTCA ACCCGTCGGG GAAACTCTCC 2100
CTATCGTGCG CAGTCGATGT GAAGCACAAC CCAGCATATC TCAACTACGC 2150
CAGCGTTGGT GGACGGGTCT TGTATGGCGA GGATGTTTAC GTTGGCTACA 2200
AGTTCTACGA CAAAACGGAG AGGGAGGTTT TGTTCCTTT TGGGCATGGC 2250
CTGTCTTACG CTACCTTCAA GCTCCCAGAT TCTACCGTGA GGACGGTCCC 2300
CGAAACCTTC CACCCGGACC AGCCCACAGT AGCCATTGTC AAGATCAAGA 2350
ACACGAGCAG TGTCCCGGGC GCCCAGGTCC TGCAGCTATA CATTTTCGGCC 2400
CCAAACTCGC CTACACATCG CCCGGTCAAG GAGCTGCACG GATTCGAAAA 2450
GGTGTATCTT GAAGCTGGCG AGGAGAAGGA GGTACAAATA CCCATTGACC 2500
AGTACGCTAC TAGCTTCTGG GACGAGATTG AGAGCATGTG GAAGAGCGAG 2550
AGGGGCATTT ATGATGTGCT TGTAGGATTC TCGAGTCAGG AAATCTCGGG 2600
CAAGGGGAAG CTGATTGTGC CTGAAACGCG ATTCTGGATG GGGCTGTAGA 2650
TTCAACACGT GAGCAAAGC GATTGCGGAA AGTACCAGAA AAGCCAAGGG 2700
AGTCAAAGGA TGGGAACTTG TGTCAATAGA AGATATGCAT GATGGGCATT 2750
TGGGATGGTG TTTGGCATTG TGCAAAGAAG CAAAGATGGA GTGATAAAAA 2800
AAAAAAAAAA AA 2812

FIG. 1B

10/530 556

| | | | | | |
|-------------|------------|------------|-------------|-------------|-----|
| MGEWQEQMMG | FDVEDVLSQL | SQNEKIALLS | GIDFWHTYPI | PKYNVPSVRL | 50 |
| TDGPNIGIRGT | KFFAGIPAAC | LPCGTALAST | WDKQLLKAG | KLLGDECIAC | 100 |
| GAHCWLGPTI | NTPRSPLGGR | GFESFSEDPY | LSGILAASMI | LGCESTGVIS | 150 |
| AVKHVANDQ | EHERRAVDCL | ITQALREVY | LRPFQIVARD | ARPGALMTSY | 200 |
| NKVNGKHVAD | SAEFLQGILR | TEWNWDPLIV | SDWYGTYTTI | DAIKAGLDLE | 250 |
| MPGVSRYRGK | YIESALQARL | LKQSTIDERA | RRVLREFAQKA | SHLKVSEVEQ | 300 |
| GRDFPEDRVL | NRQICGSSIV | LLKNENSILP | LPKSVKKVAL | VGSHVRLPAI | 350 |
| SGGGSASLVP | YYAISLYDAV | SEVLGATIT | HEVGAYAHQM | LPVIDAMISN | 400 |
| AVIHFYNDPI | DVKDRKLLGS | ENVSSTSFQL | MDYNNIPTLN | KAMFWGTLVG | 450 |
| EFIPTATGIW | EFGLSVFGTA | DLYIDNELVI | ENTTHQTRGT | AFFGKGTTTEK | 500 |
| VATRRMVAGS | TYKLRLEFGS | ANTTKMETTG | VVNFGGGAVH | LGACLKVDPO | 550 |
| EMIAHAVKAA | ADADYTIICT | GLSGEWESEG | FDRPHMDLPP | GVDTMISQVL | 600 |
| DAAPNAVNVN | QSGTPVTMSW | AHKAKAIVQA | WYGGNETGHG | ISDVLFGNVN | 650 |
| PSGKLSLSWP | VDVKHNPAYL | NYASVGGRVL | YGEDVYVGYK | FYDKTEREVL | 700 |
| FPPFGHLSYA | TFKLDPSTVR | TVPETFHPDQ | PTVAIVKIKN | TSSVPGAQVL | 750 |
| QLYISAPNSP | THRPVKELHG | FEKVYLEAGE | EKEVQIPIDQ | YATSFWDIE | 800 |
| SMWKSERGIY | DVLVGFSSQE | ISGKGKLIVP | ETRFWMGL | | 838 |

Figure 2

10/530556

| | | | | | |
|------------|------------|------------|-------------|-------------|-----|
| MMGFDVEDVL | SQLSQNEKIA | LLSGIDFWHT | YPIPKYNVPS | VRLTDGPNGI | 50 |
| RGTKFFAGIP | AACLPCGTAL | ASTWDKQLLK | KAGKLLGDEC | IAKGAHCWLG | 100 |
| PTINTPRSPL | GGRGFESFSE | DPYLSGILAA | SMILGCESTG | VISAVKHFEVA | 150 |
| NDQEHERRAV | DCLITQRALR | EVYLRPFQIV | ARDARPGALM | TSYNKVNGKH | 200 |
| VADSAEFLQG | ILRTEWNWDP | LIVSDWYGTY | TTIDAIAKAGL | DLEMPGVSRY | 250 |
| RGKYIESALQ | ARLLKQSTID | ERARRVLRFA | QKASHLKVSE | VEQGRDFPED | 300 |
| RVLNRQICGS | SIVLLKNENS | ILPLPKSVKK | VALVGSHVRL | PAISGGGSAS | 350 |
| LVPYYAISLY | DAVSEVLAGA | TITHEVGAYA | HQMLPVIDAM | ISNAVIHFYN | 400 |
| DPIDVKDRKL | LGSENVSSTS | FQLMDYNNIP | TLNKAMFWGT | LVGEFIPTAT | 450 |
| GIWEFGLSVF | GTADLYIDNE | LVIENTTHQT | RGTAFFGKGT | TEKVATRRMV | 500 |
| AGSTYKLRLE | FGSANTTKME | TTGVVNFEGG | AVHLGACLKV | DPQEMIARAV | 550 |
| KAAADADYTI | ICTGLSGEWE | SEGFDRPHMD | LPPGVDTMIS | QVLDAAPNAV | 600 |
| VVNQSGTPVT | MSWAHKAKAI | VQAWYGGNET | GHGISDVLFG | NVNPSGKLSL | 650 |
| SWPVDVKHNP | AYLNYASVGG | RVLYGEDVYV | GYKFYDKTER | EVLEFPFGHGL | 700 |
| SYATFKLPDS | TVRTVPETFH | PDQPTVAIVK | IKNTSSVPGA | QVLQLYISAP | 750 |
| NSPTHRVPKE | LHGFEKVYLE | AGEEKEVQIP | IDQYATSFWD | EIESMWKSER | 800 |
| GIYDVLVGFS | SQEISGKGKL | IVPETRFWMG | L | | 831 |

2005 100 12 08 12 2005

Figure 3

10/530556

| | | | | | |
|------------|------------|------------|------------|------------|------|
| ATGGGCGAAT | GGCAGGAGCA | GATGATGGGT | TTTGACGTGG | AGGATGTTCT | 50 |
| GTCTCAGCTG | AGCCAAAATG | AGAAGATTGC | TCTCTTGTC | GGCATTGATT | 100 |
| TCTGGCATA | TTATCCCATA | CCAAAGTACA | ACGTCCCTTC | AGTCCGCCTA | 150 |
| ACGGACGGTC | CTAACGGCAT | ACGAGGCACA | AAGTTTTTTG | CTGGCATTC | 200 |
| TGCTGCCTGC | CTGCCATGTG | GGACGGCCCT | GGCCTCTACC | TGGGATAAGC | 250 |
| AGCTGCTGAA | GAAGGCTGGG | AAGCTGCTCG | GTGATGAGTG | CATCGCAAAA | 300 |
| GGCGCCCACT | GCTGGCTGGG | CCCAACAATC | AATACTCCCC | GATCTCCTCT | 350 |
| GGGGGGGCGC | GGCTTCGAGT | CATTTTCGGA | AGATCCGTAC | CTGTCCGGCA | 400 |
| TCCTTGCTGC | ATCTATGATT | CTCGGCTGTG | AAAGCACAGG | TGTCATCTCT | 450 |
| GCCGTCAAAC | ACTTTGTGCG | CAACGACCAG | GAGCACGAGC | GGCGAGCGGT | 500 |
| CGACTGTCTC | ATCACCAGC | GGGCTCTCCG | GGAGGTCTAT | CTGCGACCCT | 550 |
| TCCAGATCGT | AGCCCGAGAT | GCAAGGCCCG | GCGCATTGAT | GACATCCTAC | 600 |
| AACAAGGTCA | ATGGCAAGCA | CGTCGCTGAC | AGCGCCGAGT | TCCTTCAGGG | 650 |
| CATTCTCCGG | ACTGAGTGGA | ATTGGGATCC | TCTCATTGTC | AGCGACTGGT | 700 |
| ACGGCACCTA | CACCACTATT | GATGCCATCA | AAGCCGGCCT | TGATCTCGAG | 750 |
| ATGCCGGGCG | TTTCACGATA | TCGCGGCAAA | TACATCGAGT | CTGCTCTGCA | 800 |
| GGCCCGTTTG | CTGAAGCAGT | CCACTATCGA | TGAGCGCGCT | CGCCGCGTGC | 850 |
| TCAGGTTTCG | CCAGAAGGCC | AGCCATCTCA | AGGTCTCCGA | GGTAGAGCAA | 900 |
| GGCCGTGACT | TCCAGAGGA | TCGCGTCCTC | AACCGTCAGA | TCTGCGGCAG | 950 |
| CAGCATTGTC | CTACTGAAGA | ATGAGAATC | CATCTTACCT | CTCCCCAAGT | 1000 |
| CCGTCAAGAA | GGTCGCCCTT | GTTGGATCCC | ACGTGCGTCT | ACCGGCTATC | 1050 |
| TCGGGAGGAG | GCAGCGCCTC | TCTTGTCCTT | TACTATGCCA | TATCTCTATA | 1100 |
| CGATGCCGTC | TCTGAGGTAC | TAGCCGGTGC | CACGATCACG | CACGAGGTGC | 1150 |
| GTGCCTATGC | CCACCAAATG | CTGCCCCGTC | TCGACGCAAT | GATCAGCAAC | 1200 |
| GCCGTAATCC | ACTTCTACAA | CGACCCCATC | GATGTCAAAG | ACAGAAAGCT | 1250 |
| CCTTGGCAGT | GAGAACGTAT | CGTCGACATC | GTTCCAGCTC | ATGGATTACA | 1300 |
| ACAACATCCC | AACGCTCAAC | AAGGCCATGT | TCTGGGGTAC | TCTCGTGGGC | 1350 |
| GAGTTTATCC | CTACCGCCAC | GGGAATTTGG | GAATTTGGCC | TCAGTGTCTT | 1400 |
| TGGCACTGCC | GACCTTTATA | TTGATAATGA | GCTCGTGATT | GAAAATACAA | 1450 |
| CACATCAGAC | GCGTGGTACC | GCCTTTTTTC | GAAAGGGAAC | GACGGAAAAA | 1500 |
| GTCGCTACCA | GGAGGATGGT | GGCCGGCAGC | ACCTACAAGC | TGCGTCTCGA | 1550 |
| GTTTGGGTCT | GCCAACACGA | CCAAGATGGA | GACGACCGGT | GTTGTCAACT | 1600 |
| TTGGCGGCGG | TGCCGTACAC | CTGGGTGCCT | GTCTCAAGGT | CGACCCACAG | 1650 |
| GAGATGATTG | CGCGGGCCGT | CAAGGCCGCA | GCCGATGCCG | ACTACACCAT | 1700 |
| CATCTGCACG | GGACTCAGCG | GCGAGTGGGA | GTCTGAGGGT | TTTGACCGGC | 1750 |
| CTCACATGGA | CCTGCCCCCT | GGTGTGGACA | CCATGATCTC | GCAAGTTCTT | 1800 |
| GACGCCGCTC | CCAATGCTGT | AGTCGTCAAC | CAGTCAGGCA | CCCCAGTGAC | 1850 |
| AATGAGCTGG | GCTCATAAAG | CAAAGGCCAT | TGTGCAGGCT | TGGTATGGTG | 1900 |
| GTAACGAGAC | AGGCCACGGA | ATCTCCGATG | TGCTCTTTGG | CAACGTCAAC | 1950 |
| CCGTGCGGGA | AACTCTCCCT | ATCGTGGCCA | GTCGATGTGA | AGCACAACCC | 2000 |
| AGCATATCTC | AACTACGCCA | GCGTTGGTGG | ACGGGTCTTG | TATGGCGAGG | 2050 |

FIG. 4A

10/530556

| | | | | | |
|------------|------------|------------|------------|------------|------|
| ATGTTTACGT | TGGCTACAAG | TTCTACGACA | AAACGGAGAG | GGAGGTTCTG | 2100 |
| TTTCCTTTTG | GGCATGGCCT | GTCTTACGCT | ACCTTCAAGC | TCCCAGATTC | 2150 |
| TACCGTGAGG | ACGGTCCCCG | AAACCTTCCA | CCCGGACCAG | CCCACAGTAG | 2200 |
| CCATTGTCAA | GATCAAGAAC | ACGAGCAGTG | TCCCGGGCGC | CCAGGTCCTG | 2250 |
| CAGCTATACA | TTTCGGCCCC | AAACTCGCCT | ACACATCGCC | CGGTCAAGGA | 2300 |
| GCTGCACGGA | TTCGAAAAGG | TGTATCTTGA | AGCTGGCGAG | GAGAAGGAGG | 2350 |
| TACAAATACC | CATTGACCAG | TACGCTACTA | GCTTCTGGGA | CGAGATTGAG | 2400 |
| AGCATGTGGA | AGAGCGAGAG | GGGCATTTAT | GATGTGCTTG | TAGGATTCTC | 2450 |
| GAGTCAGGAA | ATCTCGGGCA | AGGGGAAGCT | GATTGTGCCT | GAAACGCGAT | 2500 |
| TCTGGATGGG | GCTGTAG | | | | 2517 |

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FIG. 4B

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